SECTION 708
CONCRETE, PLASTIC, AND FIBER PIPE

708.01 REINFORCED CONCRETE PIPE.

708.01.1 General. Use cement in reinforced concrete pipe meeting AASHTO M 85 requirements for Portland cement.

Furnish reinforced concrete pipe produced by a manufacturing plant that has been approved by the Engineer before the contract award date.

The bid tabulations will specify only the span dimension to the nearest inch (25 mm), of pipe arch culverts as shown in the Detailed Drawings for the culverts. The plans will show both span and rise dimensions.

The Department will inspect and approve the equipment and methods for manufacturing, protecting, curing and storing pipe before fabrication.

Meet AASHTO M 55 requirements for reinforcement in circular or elliptical pipe.

Use Type V cement when specified.

708.01.2 Circular Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe. Furnish pipe meeting AASHTO M 170 requirements, except that par. 12.4 does not apply. Use a minimum wall B pipe.

708.01.3 Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe. Furnish pipe meeting AASHTO M 206 requirements with Class A-III pipe strength requirements.

708.01.4 Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe. Furnish pipe meeting AASHTO M 207 requirements.

708.01.5 Flared End Terminal Sections and Tee Risers. Furnish flared end terminal sections and the riser of tee sections meeting AASHTO M 170 class III pipe requirements.

708.02. CONCRETE PRESSURE PIPE. Furnish reinforced concrete low head pressure pipe meeting ASTM C 361 requirements.

708.03. PERFORATED CONCRETE PIPE. Furnish perforated concrete pipe meeting AASHTO M 175 requirements.

708.04. POROUS CONCRETE PIPE. Furnish porous concrete pipe meeting AASHTO M 176 requirements.

708.05 PVC GRAVITY SEWER AND DRAIN PIPE.

708.05.1 Pipe. Furnish gravity pipe 4 through 12-inch (105 through 305 mm) nominal diameter produced by continuous extrusion and having self extinguishing characteristics. The PVC plastic must have a cell classification of 12454-B, 12454-C, or 13364-B (minimum tensile modulus of 500,000 psi (34.5 MPa)) as specified in

ASTM D 1784. Meet ASTM D 3034 requirements for pipe and fittings. Meet a minimum Standard Dimension Ratio (SDR) of 35.

Furnish perforated pipe meeting ASTM D 2729 requirements.

Furnish pipe with nominal laying lengths of 12.5 feet (3.8 m), except for connections to manholes, inlets, and other appurtenances.

Assure each pipe length is marked with nominal size, PVC cell classification, SDR, and ASTM designation.

708.05.2 Pipe Joints. Each pipe length must have a bell end. The bell must have an elastomeric rubber gasket in a retaining groove to provide a watertight joint when the pipe is joined. The rubber gasket must maintain a watertight joint under all service conditions including expansion, contraction, settlement, and pipe deformation movements. Make the joint connections following the pipe manufacturer's recommendations.

708.05.3 Appurtenance Joints. Make all connections to manholes, inlets, or other appurtenances watertight using rubber gaskets, waterstops, or non-shrink Portland cement grout for grouted joints.

708.06 PVC PRESSURE WATER PIPE.

708.06.1 Pipe. Furnish pressure PVC water pipe 4 through 12-inch (105 through 305 mm) nominal diameter in either Class 150 with a dimension ratio (DR) of 18 or Class 200 with a dimension ratio (DR) of 14 meeting AWWA Specification C-900. Pipe sections must be marked with diameter, code designation, DR, pressure class, and AWWA specification.

708.06.2 Pipe Joints. Each manufactured length of pipe must have a integral bell with an elastomeric gasket in a retaining groove that provides a watertight joint when joined.

708.07 POLYETHYLENE CORRUGATED DRAINAGE PIPE OR TUBING. Furnish heavy duty corrugated polyethylene drainage pipe or tubing and fittings meeting AASHTO M 252 requirements for nominal diameters 3 through 10-inches (76 through 254 mm) and AASHTO M 294 for nominal diameters 12 through 36-inches (305 through 915 mm).